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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/691,212
Filing Date: October 21, 2003
Appellant(s): DORNBUSCH ET AL.

Ryan S. Davidson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 14, 2008 appealing from the Office action mailed March 6, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6396154	Hikita et al.	5-2002
5576589	Dreifus et al.	11-1996
4296391	Hazama et al.	10-1981
6329715	Hayashi	12-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3 – 8, 10 – 21 and 23 – 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(A) In claim 1, lines 9 – 12, it is not clear what appellant regards as "wherein said first and second terminal pairs are separated by a first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter". Specifically, the limitation "not less than a first stopband attenuation of the first external filter" in the claim is not clear because what is the first stopband attenuation of the first external filter? Appellant should note that stopband attenuation specifies the minimum amount of **attenuation** a filter will

exhibit at a designated frequency or range of frequencies, which lie outside the pass band. Since the claim 1 does not specifically claim that neither the specific number of the first stopband attenuation nor the specific number is a positive or negative integer number, hence any attenuation between negative infinity numbers and positive infinity numbers could read as the first stopband attenuation of the first external filter. Furthermore, appellant should note that infinity numbers of none-integer numbers exist even between -1 and +1. Thus, the metes and bounds of the term "first stopband attenuation" in this claim is unclear because the term "first stopband attenuation" does not particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.

(B) Dependent claims 3 – 7 do not rectify the deficiency of claim 1 and therefore are similarly rejected.

(C) In claim 8, lines 9 – 13, it is not clear what appellant regards as "said third and fourth terminal pairs are separated by a second predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a second stopband attenuation of the second external filter". Specifically, the limitation "not less than a second stopband attenuation of the second external filter" in the claim is not clear because what is the second stopband attenuation of the second external filter? As explained in the previous paragraph, the stopband attenuation specifies the minimum amount of **attenuation** a filter will exhibit at a designated frequency or range of frequencies, which lie outside the pass band. Since the claim 8 does not specifically claim that neither the specific number of the second stopband attenuation nor the specific

number is a positive or negative integer number, hence any attenuation between negative infinity numbers to positive infinity numbers could read as the second stopband attenuation of the second external filter. Thus, the metes and bounds of the term "second stopband attenuation" in this claim is unclear because the term "second stopband attenuation" does not particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.

(D) Dependent claims 10 – 14 do not rectify the deficiency of claims 1 and 8, and therefore are similarly rejected.

(E) In claims 15, 21 and 26, it is not clear what appellant regards as "wherein said first terminal and second terminal are separated by a first predetermined distance sufficient to maintain a first input-to-output isolation attenuation therebetween that is not less than a first stopband attenuation of the first external filter, and wherein said third terminal and said fourth terminal are separated by a second predetermined distance sufficient to maintain a second input-to-output isolation attenuation therebetween that is not less than a second stopband attenuation of the second external filter". Specifically, the limitations "a first predetermined distance … not less than a first stopband attenuation of the first external filter" and "a second predetermined distance … that is not less than a second stopband attenuation of the second external filter" in the claim are not clear because what are the first and second stopband attenuations of the first and second external filters? Furthermore, the terms "first stopband attenuation" and "second stopband attenuation" in the claim are unclear because the terms "first stopband attenuation" and "second stopband attenuation" do not particularly point out and

distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.

(F) Dependent claims 16 – 20, 23 – 25 and 27 – 29 do not rectify the deficiency of claims 15, 21 and 26, and therefore are similarly rejected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5 – 7, 21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Hikita et al. (U. S. Pat. No. 6,396,154).

Regarding claim 1, Hikita et al. discloses in e.g., Fig. 1 an integrated circuit (the semiconductor device in Fig. 1; column 3, lines 49 – 53) comprising:

- a semiconductor substrate (the substrate of the chip 2; column 6, lines 23 – 31) having a first pair of bonding pads (P23 and P24; column 4, lines 10 and 11) for conducting a differential output signal thereon (column 4, lines 4 – 20) and configured to be coupled to an input of a first external filter (222 of the SAW filter 22; see e.g., Fig. 1 and column 4, lines 7 – 13), and a second pair of bonding pads (P21 and P22) for conducting a differential input signal thereon and configured to be coupled to an output of said first external filter (221; see e.g., Fig. 1 and column 4, lines 10 – 13); and
- an integrated circuit package (1 and 40; see Fig. 2 and column 3, line 54)

encapsulating said semiconductor substrate (the substrate of the chip 2) and having first (P13 and P14) and second (P11 and P12) terminal pairs corresponding and coupled to said first and second pairs of bonding pads, respectively (see e.g., Fig. 1),

- wherein said first and second terminal pairs (P11 – P14) are separated by a first predetermined distance (the distance between the elements P11 – P14; see e.g., Fig. 1) sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers and positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Hikita et al. discloses a filter, hence Hikita et al. fully anticipates this limitation) of the first external filter (222).

Furthermore, the following limitation "configured to be coupled to an input of a first external filter … configured to be coupled to an output of said first external filter" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Since the bonding pads of Hikita et al. are capable of performing the intended use, Hikita et al. fully meets this limitation.

Regarding claim 3, Hikita et al. discloses in e.g., Fig. 1 said first (P13 and P14) and second (P11 and P12) terminal pairs being located along a first side of said integrated circuit

package (1 and 40) and separated by a first plurality of intervening terminals (the pads 12 that are located between the line of P11 – P12 and the other line of P13 – P14; see e.g., Fig. 1).

Regarding claim 5, the limitation "said first plurality of intervening terminals comprises at least one power supply terminal" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Furthermore, since any one of the first plurality of intervening terminals is capable of performing as a power supply terminal, Hikita et al. fully meets this limitation.

Regarding claim 6, Hikita et al. discloses in e.g., Fig. 1 first (P13) and second (P14) terminals of said first terminal pair (P13 and P14) being "adjacent" to one another (see e.g., Fig. 1), and first (P11) and second (P12) terminals of said second terminal pair (P11 and P12) are "adjacent" to one another (see e.g., Fig. 1).

Regarding claim 7, Hikita et al. discloses in e.g., Fig. 1 said first (P13 and P14) and second (P11 and P12) terminal pairs being located at opposite ends of said first side of said integrated circuit package (1; see e.g., Fig. 1).

Regarding claim 21, Hikita et al. discloses in e.g., Fig. 1 an integrated circuit comprising:

- a semiconductor substrate (the substrate of the chip 2) having a first pair of bonding pads (P23 and P24) conducting a differential output signal thereon (column 4, lines 4 – 20) and configured to be coupled to an input (222) of an external filter (22), and a second pair of bonding pads (P21 and P22) conducting a differential input signal thereon and configured to be coupled to an output (221) of said external filter (22; see e.g., Fig. 1); and
- an integrated circuit package (1 and 40) encapsulating said semiconductor substrate

(the substrate of the chip 2) and having at least first and second sides, and comprising a first pair of terminals (P13 and P14) located at a first end of said first side and coupled to said first pair of bonding pads (see e.g., Fig. 1), and a second pair of terminals (P11 and P12) located at a second end of said first side opposite said first end and coupled to said second pair of bonding pads (see e.g., Fig. 1 and column 4, lines 21 – 32),

- wherein said first pair of terminals (P13 and P14) and said second pair of terminals (P11 and P12) are separated by a predetermined distance (the distance between the P11, P12, P13 and P14; see e.g., Fig. 1) sufficient to maintain an input-to-output isolation attenuation therebetween (see e.g., Fig. 1) that not less than a first stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Hikita et al. discloses a filter, hence Hikita et al. fully anticipates this limitation) of the first external filter (222).

Furthermore, the following limitation "configured to be coupled to an input of an external filter … configured to be coupled to an output of said first external filter" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Since the bonding pads of Hikita et al. are capable of

performing the intended use, Hikita et al. fully meets this limitation.

Regarding claim 23, Hikita et al. discloses in e.g., Fig. 1 said integrated circuit package further comprises a thin quad flat package (TQFP; since the package of Hikita et al. is a "thin", four sides and flat, the Hikita et al. fully meets this limitation.).

Claims 15 – 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Dreifus et al. (U. S. Pat. No. 5,576,589).

Regarding claim 15, Dreifus et al. discloses in e.g., Fig. 2 an integrated circuit comprising:

- a semiconductor substrate (21; column 6, line 38) having first, second, third, and fourth quadrants having respective first, second, third, and fourth bonding pads (26; see e.g., Fig. 2) located therein (see e.g., Fig. 2), said semiconductor substrate (21) including a first circuit (25, at the right-side) configured to be coupled to a first external filter (24, at the right-side) coupled to said first circuit through said first and second bonding pads (26, at the right-side), and a second circuit (25, at the left-side) configured to be coupled to a second external filter (24, at the left-side) coupled to said second circuit through said third and fourth bonding pads (26, at the left-side); and
- an integrated circuit package (the external integrated circuits device that is attached to the element 21; column 6, lines 33 and 34) encapsulating said semiconductor substrate (21) and having first, second, third, and fourth terminals (the pads on the external integrated circuits device that are attached to the elements 26) corresponding

and coupled to said first, second, third, and fourth bonding pads, respectively (see e.g., Fig. 2 and column 6, lines 33 and 34),

- wherein said first terminal and said second terminal (the pads on the external integrated circuits device that are attached to the elements 26) are separated by a first predetermined distance (the distance that is formed between the elements 26) sufficient to maintain a first input-to-output isolation attenuation therebetween that is not less than a first stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Dreifus et al. discloses a filter, hence Dreifus et al. fully anticipates this limitation) of the first external filter (24, at the right-side), and
- wherein said third terminal and said fourth terminal (the pads on the external integrated circuits device that are attached to the elements 26) are separated by a second predetermined distance (the distance that is formed between the elements 26) sufficient to maintain a second input-to-output isolation attenuation therebetween that is not less than a second stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the

input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Dreifus et al. discloses a filter, hence Dreifus et al. fully anticipates this limitation) of the second external filter (24, at the left-side; see e.g., Fig. 2).

Furthermore, the following limitation "configured to be coupled to a first external filter … configured to be coupled to a second external filter" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Dreifus et al. Since the bonding pads of Dreifus et al. are capable of performing the intended use, Dreifus et al. fully meets this limitation.

Regarding claim 16, Dreifus et al. discloses in e.g., Fig. 2 said first and second circuits (25s in the both sides) comprising portions of radio frequency (RF) receivers (column 8, lines 20 – 22).

Regarding claim 17, the limitation "said first circuit comprises a portion of a satellite receiver and said second circuit comprises a portion of a terrestrial receiver" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Dreifus et al. Furthermore, since any one of the first and second circuits are capable of performing as a satellite receiver or a terrestrial receiver, Dreifus et al. fully meets this limitation.

Regarding claim 18, Dreifus et al. discloses in e.g., Fig. 2 said first and second circuits (25s in the both sides) having "substantially" the same layout (see e.g., Fig. 2).

Regarding claim 19, Dreifus et al. discloses in e.g., Fig. 2 said first and second circuits

(25s in the both sides) being configured to be coupled to first and second external surface acoustic wave (SAW) filters (24; column 6, lines 36 – 46), respectively (see e.g., Fig. 2). Furthermore, the following limitation "configured to be coupled to first and second external surface acoustic wave (SAW) filters" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Since the bonding pads of Hikita et al. are capable of performing the intended use, Hikita et al. fully meets this limitation.

Claims 26, 27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Hazama et al. (U. S. Pat. No. 4,296,391).

Regarding claim 26, Hazama et al. discloses in e.g., Fig. 9B an integrated circuit comprising:

- adjacent first (41; column 9, lines 67 – 68) and second (41') terminals at a first end of a first side of the integrated circuit (20; column 7, line 34) configured to be coupled to a differential input (23 and 26; column 9, line 65) of a first external filter (the VHF filter; column 9, line 66);
- adjacent third (42; column 10, lines 1 and 2) and fourth (42') terminals at a second end of said first side of the integrated circuit (20) configured to be coupled to a differential output (24 and 25; column 9, line 68) of said first external filter (the VHF filter; see e.g., Fig. 9B), wherein said adjacent first (41) and second (41') terminals and said adjacent third (42) and fourth (42') terminals are separated by a first predetermined distance (the distance between the elements 41, 41', 42 and 42')

sufficient to maintain an input-to-output isolation attenuation therebetween that not less than a first stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Hazama et al. discloses a filter, hence Hazama et al. fully anticipates this limitation) of the first external filter (the VHF filter), and

- adjacent fifth (43; column 10, line 5) and sixth (43') terminals at a first end of a second side of the integrated circuit (20) configured to be coupled to a differential input (29 and 32; column 10, line 2) of a second external filter (the UHF filter; column 10, line 3); and
- adjacent seventh (44; column 10, line 8) and eighth (44') terminals at a second end of said second side of the integrated circuit (20) configured to be coupled to a differential output (30 and 31; column 10, lines 5 and 6) of said second external filter (the UHF filter; see e.g., Fig. 9B). wherein said adjacent fifth (43) and sixth (43') terminals and said adjacent seventh (44) and eighth (44') terminals are separated by a second predetermined distance (the distance between the elements 43, 43', 44 and 44') sufficient to maintain an input-to-output isolation therebetween that is not less than a second stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to

positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Hazama et al. discloses a filter, hence Hazama et al. fully anticipates this limitation) of the second external filter (the UHF filter; see e.g., Fig. 9B).

Furthermore, the following limitation "configured to be coupled to a differential input of a first external filter ... configured to be coupled to a differential output of said first external filter ... configured to be coupled to a differential input of a second external filter ... configured to be coupled to a differential output of said second external filter" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hazama et al. Since the bonding pads of Hazama et al. are capable of performing the intended use, Hazama et al. fully meets this limitation.

Regarding claim 27, Hazama et al. discloses in e.g., Fig. 9B the integrated circuit comprises a quad flat package (since the package of Hazama et al. has four sides and flat, the Hazama et al. fully meets this limitation.).

Regarding claim 29, Hazama et al. discloses in e.g., Fig. 9B each of said first and second external filters comprising a surface acoustic wave (SAW) filter (column 4, lines 60 – 63).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 8, 10 – 14, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hikita et al.

Regarding claims 4 and 11, while Hikita et al. discloses the use of the first (claim 4 and claim 11) and second (claim 11) pluralities of intervening terminals, Hikita et al. does not disclose the specific number of the first and second pluralities of intervening terminals. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to determine the first and second pluralities of intervening terminals being twelve terminals, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 8 and 25, while Hikita et al. discloses the use of the semiconductor substrate and the integrated circuit package, Hikita et al. does not disclose third and fourth pair of bonding pads in the semiconductor substrate and third and fourth terminal pairs in the integrated circuit package. It would have been obvious to one having ordinary skill in the art at the time when the invention was made to duplicate the first and second pair of bonding pads onto a portion of a bigger semiconductor substrate to have the third and fourth pairs of bonding pads, also duplicating the first and second terminal pairs to have third and fourth terminal pairs in the integrated circuit package, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

Regarding claim 10, Hikita et al., as modified, discloses said first and second terminal pairs being located along a first side of said integrated circuit package (1) and separated by a first plurality of intervening terminals and said third and fourth terminal pairs being located along a second side of said integrated circuit package and separated by a second plurality of intervening terminals.

Regarding claim 12, the limitation "said first and second pluralities of intervening terminals comprises at least one power supply terminal" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Furthermore, since any one of the first and second pluralities of intervening terminals is capable of performing as a power supply terminal, Hikita et al. fully meets this limitation.

Regarding claim 13, Hikita et al., as modified, discloses first and second terminals of each of said first, second, third, and fourth terminal pairs being adjacent to one another.

Regarding claim 14, Hikita et al., as modified, discloses said first and second terminal pairs being located at opposite ends of said first side of said integrated circuit package and said third and fourth terminal pairs being located at opposite ends of said second side of said integrated circuit package.

Regarding claim 24, while Hikita et al. discloses the use of the thin quad flat package (TQFP), Hikita et al. does not disclose the specific number of the terminals having 64-lead TQFP. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to determine the thin quad flat package (TQFP) having 64-leads, since it has been held that discovering an optimum value of a result effective variable involves only routine

skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dreifus et al. in view of Hayashi (U. S. Pat. No. 6,329,715).

While Dreifus et al. discloses the use of the first, second, third and fourth bonding pads, Dreifus et al. does not disclose fifth, sixth, seventh, and eighth bonding pads. Hayashi teaches in e.g., Fig. 1 a semiconductor substrate (1; column 7, lines 41 – 50) comprising fifth (301), sixth (302), seventh (303), and eighth (304) bonding pads respectively located in said first, second, third, and fourth quadrants (see e.g., Fig. 1) and forming complementary signal pairs with signals conducted on said first (32), second (311), third (312), and fourth (33) bonding pads, respectively (see e.g., Fig. 1 and column 7, lines 53 – 56). It would have been obvious to one of ordinary skill in the art at the time when the invention was made to apply the fifth, sixth, seventh, and eighth bonding pads of Hayashi onto the semiconductor substrate of Dreifus et al. as taught by Hayashi to provide ground pads for grounding (column 8, lines 47 and 48).

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hazama et al.

While Hazama et al. discloses the use of the terminals, Hazama et al. does not disclose the number of the terminal being sixty four and assignment of pin numbers to the terminals. It would have been obvious to one having ordinary skill in the art at the time when the invention was made to determine the terminals being sixty four and to assign pin numbers to the terminals, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art for the purpose of defining and identifying which operation each

terminal would perform within the integrated circuit. Furthermore, see In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) for the optimum value.

(10) Response to Argument

Response to arguments concerning the 35 U. S. C. § 112, 2nd paragraph

Dornbusch et al. is the appellant of the '212 application, which relates to first and second terminal pairs in an integrated circuit that are separated by a first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter. In the IC device, the first predetermined distance is formed by a relationship between a variety of elements, such as an input-to-output isolation attenuation, a first stopband attenuation, and a first external filter ('212 application claim 1, lines 9 – 12).

The '212 application claims recite certain first predetermined distance between the first and second terminal pairs in an integrated circuit. Claim 1 for example recites:

1. an integrated circuit comprising:
- a semiconductor substrate having a first pair of bonding pads for conducting a differential output signal thereon and **configured to be** coupled to an input of a **first external filter**, and a second pair of bonding pads for conducting a differential input signal thereon and **configured to be** coupled to an output of said **first external filter**; and
- an integrated circuit package encapsulating said semiconductor substrate and having first and second terminal pairs corresponding and coupled to said first and second pairs of bonding pads, respectively,
- wherein said first and second terminal pairs are separated by a **first predetermined distance sufficient** to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter.

(emphasis added).

During prosecution, Dornbusch et al. distinguished the claims of '212 application from prior art first and second terminal pairs by stating that the claims were "limited to" a "first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter".

First, the Examiner looked at the definition of a first predetermined distance in the specification and found that it was too subjective and unclear because it relied on terms such as an "input-to-output isolation attenuation," a "first stopband attenuation," and a "first external filter" ('212 application claim 1, lines 9 – 12). Furthermore, the specification of the instant application did not provide any definition nor any range or value for the "first and second predetermined distances," "first and second input-to-output isolation attenuations," "input-to-output isolation attenuation", "first and second stopband attenuations," and the "first and second external filters."

Here we have a spacing between terminals that is set by the filter properties it is intended to be used with. Please not that this is same fact pattern of Ex parte Brummer, For example, the Board has held that a limitation in a claim to a bicycle that recited "said front and rear wheels so spaced as to give a wheelbase that is between 58 percent and 75 percent of the height of the rider that the bicycle was designed for" was indefinite because the relationship of parts was not based on any known standard for sizing a bicycle to a rider, but on a rider of unspecified build. *Ex parte Brummer*, 12 USPQ2d 1653 (Bd. Pat. App. & Inter. 1989). See MPEP2173.05(b). In the instant case, without knowing what the stopband of the filter intended is, there is no way to determine whether or not a particular device infringes.

35 U. S. C. § 112, 2nd paragraph, requires that the specification of an application "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the appellant regards as his invention." Because claims delineate the patentee's right to exclude, the patent statute requires that the scope of the claims be sufficiently definite to inform the public of the bounds of the protected invention, i.e., what subject matter is covered by the exclusive rights of the patent. Otherwise, competitors cannot avoid infringement, defeating the public notice function of patent claims. Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996) ("[T]he primary purpose of the requirement is 'to guard against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their [respective] rights.'") (quoting Gen. Elec. Co. v. Wabash Appliance Corp., 304 U.S. 364, 369 (1938)). The Supreme Court has stated that "[t]he statutory requirement of particularity and distinctness in claims is met only when [the claims] clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise." United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 236 (1942).

In this case, the Examiner found that the asserted claims, which contained the limitation that the first and second terminal pairs in an integrated circuit that are separated by a "first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter," were indefinite. "Only claims 'not amenable to construction' or 'insolubly ambiguous' are indefinite." Datamize, 417 F.3d at 1347 (citing Novo Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1353 (Fed. Cir. 2003); Honeywell, 341 F.3d at 1338; Exxon Research, 265 F.3d at 1375). Because the Examiner conclude that neither appellant's proposed definition nor any other

possible construction resolves the ambiguity in the scope of the limitation "first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter." The Examiner conclude that claims containing that limitation are indefinite. Specifically, the specification of the instant application lacked to provide any specific range or value for the "first and second predetermined distances," "first and second input-to-output isolation attenuations," "input-to-output isolation attenuation", "first and second stopband attenuations," and the "first and second external filters."

Appellant argues that "first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter" as used in the asserted claims is definite and has a two-part definition:

1) a distance sufficient to maintain an input-to-output isolation attenuation between the first and second terminal pairs.

2) a distance that is not less than a first stopband attenuation of the first external filter.

First, the specification of the instant application lacked to provide any specific range or value for the "first and second predetermined distances," "first and second input-to-output isolation attenuations," "input-to-output isolation attenuation", "first and second stopband attenuations," and the "first and second external filters." Regarding the second part, the specification states:

> SAW filter 112 has a passband attenuation of about -20 dB, a transition band width 330 of about 2 MHz, and a stopband attenuation of approximately -70 dB.
>
> '212 application page 6, paragraph 0022, lines 8 – 10.

Thus, the claim is indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope. Having reviewed the both parts of Appellant's proposed construction, both individually and in combination, in the context of the intrinsic record and the knowledge of a person of ordinary skill in the art, the Examiner hold that the ambiguity as to the scope of "first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter" cannot be resolved.

Appellant argues that the second part of its definition (i.e., a distance that is not less than a first stopband attenuation of the first external filter) is sufficiently objective so that a skilled artisan would understand the limits of the claimed "first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter." Appellant primarily focuses on the standard of a "reasonable degree of clarity and particularity" MPEP § 2172.03. According to appellant, the recitation of a particular number or range of numbers is not required for a "reasonable degree of clarity and particularity." Appellant argues "the stopband attenuation is defined by the **particular** external filter selected for implementation, and thus one of ordinary skill in the art will readily appreciate that a **selected** external filter for which the first pair of bonding pads are configured to be coupled to (as recited by the claims) will have a **particular** finite, measurable stopband attenuation and the **particular** distance between the bonding pads/terminal pairs of the IC will result in a **particular**, finite isolation attenuation, and the potential for infringement in view of these determined characteristics is reasonably discerned from the language of the claims. Accordingly, it is respectfully submitted that the language of the claim is clear and sufficiently

defines the metes and bounds of the claimed subject matter." This argument is not persuasive. The fact that an artisan would know how to perform these measurements and tests, however, says nothing about whether the artisan would also know which external filter was "first stopband attenuation" in the limitation "first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter" as that limitation is used in the claims of the '212 application.

Furthermore, these considerations (i.e., particular external filter selected for implementation will have a particular finite, measurable stopband attenuation, the particular distance and a particular, finite isolation attenuation) are as ambiguous as the limitation "first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation of the first external filter."

Assuming a person of ordinary skill would test every external filters separately, determining the effect of each external filter by observing whether the particular external filter will provide a particular finite, measurable stopband attenuation or not, as Appellant suggests, this testing protocol still does not answer the fundamental question: what size, type, weight and/or band width of the external filter must be need to meet the limitation? Appellant does not attempt to resolve this ambiguity, instead arguing that this limitation merely adequate for the circumstances.

In Geneva Pharmaceuticals, Inc. v. GlaxoSmithKline PLC, 349 F.3d 1373, 1384 (Fed. Cir. 2003), we refused to adopt a proposed construction for "synergistically effective amount" ("a formulation falls outside the scope of the claims if a given antibiotic, bacteria, and disease

combination provides no synergy") because the construction would have been indefinite. Because the patent claims at issue did not identify the specific bacteria, we rejected the proposed construction because "a given embodiment would simultaneously infringe and not infringe the claims, depending on the particular bacteria chosen for analysis." Id. We concluded that such a construction that results in an artisan not knowing from "one bacterium to the next whether a particular composition standing alone is within the claim scope or not" was "the epitome of indefinitness." Id.

As in Geneva Pharmaceuticals, under appellant's proposed construction in this case, an artisan would not know from one external filter to the next whether a certain external filter was within the scope of the claims because a wide variety of factors could affect adequacy (size, type, weight and/or band width of the external filter must be need to meet the limitation, etc.). In other words, a given external filter might be adequate to provide a particular finite, measurable first stopband attenuation, the particular first distance and a particular, finite isolation attenuation, whereas in others it would not be. When a proposed construction requires that an artisan make a separate infringement determination for every set of circumstances in which the composition may be used, and when such determinations are likely to result in differing outcomes (sometimes infringing and sometimes not), that construction is likely to be indefinite.

Finally, on page 8, Appellant argues "the Office has failed to provide any evidence of an actual filter having infinite stopband attenuation, As noted above, the standard for evaluating a claim under § 112, second paragraph, is whether the claim apprises *one of ordinary skill in the art* of its scope. As one of ordinary skill in the art would readily appreciate that the Office's

purely hypothetical example of a filter with an infinite stopband attenuation does not and will not exist in practice, one of ordinary skill in the art will readily appreciate that the stopband attenuation recited in the claim language is a finite attenuation, and thus definite and unambiguous." This argument is not persuasive because appellant merely argues against the Examiner's Office action rather than provide any factual evidence or reasons to support why the stopband attenuation recited in the claim language is a finite attenuation.

For all the reasons provided above, a prima facie case of claims 1, 3 – 8, 10 – 21 and 23 – 29 has been established pursuant to the requirements of the 35 U. S. C. § 112, 2nd paragraph. Therefore, the rejection of claims 1, 3 – 8, 10 – 21 and 23 – 29 is proper, and the Appellant's arguments for their reversal are not persuasive.

Response to arguments concerning the 35 U. S. C. § 102(b) rejection of claims 1, 3, 5 – 7, 21 and 23 over Hikita et al.

On page 11, Appellant argues "[I]ndependent claim 1 recites the features of 'wherein said first and second terminal pairs *are separated by a first predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween* of not less than *a first stopband attenuation of the first external filter*' and independent claim 21 recites similar features. Hikita fails to contemplate a stopband attenuation of an external filter, or any other operational attenuation for that matter." This argument is not persuasive. As explained in the previous paragraphs, the metes and bounds of the terms "first predetermined distance," "input-to-output isolation attenuation," "first stopband attenuation," and "first external filter" in the claims are

unclear. Furthermore, Hikita discloses an SAW filter as the external filter (222 of the SAW filter 22; column 4, lines 7 – 13) as same as the appellant's SAW filter (112; Fig. 2, page 6, paragraph 0022, line 3) and Hikita also discloses in e.g., Fig. 1 all of the structural limitations, i.e., first (P13 and P14) and second (P11 and P12) terminal pairs being separated by a first predetermined distance (the distance between the elements P11 – P14; see e.g., Fig. 1) and connected to an external filter (222 of the SAW filter 22; column 4, lines 7 – 13) thru the first (P23 and P24; column 4, lines 10 and 11) and second (P21 and P22) bonding pads as same as the appellant's SAW filter (112; Fig. 2, page 6, paragraph 0022, line 3) as recited in the rejected claims 1 and 21. Even further, Appellant clearly stated in his/her specification a practical SAW filter … has a small attenuation in the passband, high finite attenuation in the stop band (page 5, paragraph 0018, lines 4 – 6). Thus, Hikita discloses the stopband attenuation of an external filter and any other operational attenuation.

Next, Appellant argues "Hikita fails to disclose or suggest a predetermined distance sufficient to maintain an input-to-output isolation attenuation that is not less than the stopband attenuation of an external filter, much less that first and second terminal pairs of an integrated circuit are separated by such predetermined distance as provided by claims 1 and 21." This argument is not persuasive. As explained in the previous paragraphs, the metes and bounds of the terms "first predetermined distance," "input-to-output isolation attenuation," "first stopband attenuation," and "first external filter" in the claims are unclear. Furthermore, Hikita discloses in e.g., Fig. 1 said first and second terminal pairs (P11 – P14) being separated by a first predetermined distance (the distance between the elements P11 – P14; see e.g., Fig. 1) sufficient

to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers and positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Hikita et al. discloses a filter, hence Hikita et al. fully anticipates this limitation) of the first external filter (222).

Next, Appellant argues "Hikita fails to contemplate an external filter, a stopband attenuation of an external filter, an input-to-output isolation attenuation between terminal pairs, how such input-to-output isolation attenuation is affected by distance, or a predetermined distance between the terminal pairs to achieve any particular input-to-output isolation attenuation in any manner, so Hikita necessary fails to disclose or even suggest that an integrated circuit having terminal pairs configured to be coupled to an external filter via terminal pairs has those terminal pairs separated by a predetermined distance sufficient to maintain an input-to-output isolation attenuation therebetween of not less than the stopband attenuation of an external filter as provided by claims 1 and 21." This argument is not persuasive. As explained in the previous paragraphs, the metes and bounds of the terms "first predetermined distance," "input-to-output isolation attenuation," "first stopband attenuation," and "first external filter" in the claims are unclear. In other words, since the rejected claims 1 and 21 do not explicitly set forth the number of the stopband attenuation or a designated frequency or range of frequencies of the filter or the

range of the pass band or the specific range of the distance, hence any minimum numbers or amounts of **attenuation** filters of Hikita will exhibit at a designated frequency or range of frequencies, which lie outside the pass band read as the first and second stopband attenuations. Since Hikita discloses all structural limitations (i.e., external filters and terminal pairs that are separated by a predetermined distance), hence Hikita fully meets a stopband attenuation of an external filter, an input-to-output isolation attenuation between terminal pairs, and results or relationships between the terminal pairs and the input-to-output isolation attenuation as set forth in the claims 1 and 21. Furthermore, since appellant does not provide any evidence or data to compare the prior art with the appellant's structure for the "an input-to-output isolation attenuation," "a predetermined distance" and "particular input-to-output isolation attenuation," hence, the Examiner also like to ask same question to the appellant "how an input-to-output isolation attenuation is affected by distance? or a predetermined distance between the terminal pairs to achieve any particular input-to-output isolation attenuation in any manner."

Next, Appellant argues "[T]he only structure of the package 40 that could constitute a terminal is the lead frame 14 that is connected to the mother chip 1 via bonding wires 13. However, the lead frame 14 does not 'correspond to' the connection pads of the daughter chip 2 implementing the SAW filter 22, nor does Hikita disclose that the lead frame 14 is coupled to the connection pads of the SAW filter 22 in any manner. Thus, Hikita fails to disclose or suggest the recited features of an integrated circuit package ... having first and second terminal pairs corresponding and coupled to said first and second pairs of bonding pads, respectively' as recited by claim 1." This argument is not persuasive because the claims 1 and 21 do not specifically

claim that the first and second terminal pairs are formed by a lead frame. Thus, a reasonable interpretation of the terms "first and second terminal pairs" includes the P11 – P14 pads of Hikita.

Next, Appellant argues "Hikita fails to disclose an integrated circuit package encapsulating a semiconductor substrate and comprising a first pair of terminals coupled to a first pair of bonding pads configured to be coupled to an input of an external filter and comprising a second pair of terminals coupled to a second pair of bonding pads configured to be coupled to an output of the [first] external filter as recited by claim 21." This argument is not persuasive because Hikita clearly discloses in e.g., Fig. 1 an integrated circuit package (1 and 40) encapsulating said semiconductor substrate (the substrate of the chip 2) and comprising a first pair of terminals (P13 and P14) coupled to said first pair of bonding pads (P23 and P24; see e.g., Fig. 1), and a second pair of terminals (P11 and P12) coupled to said second pair of bonding pads (P21 and P22; see e.g., Fig. 1 and column 4, lines 21 – 32). Furthermore, the following limitation "configured to be coupled to an input of an external filter … configured to be coupled to an output of said first external filter" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Since the bonding pads of Hikita et al. are capable of performing the intended use, Hikita et al. fully meets this limitation.

Next, Appellant argues "Hikita fails to disclose that the pairs of leads coupled to the connection pads that serve as the input of the SAW filter 22 and the pair of leads coupled to the

connection pads that serve as the output of the SAW filter 22 are located at different ends of a side of the package 400 as provides by claim 21." This argument is not persuasive because Hikita clearly shows in Fig. 1 the first pair of terminals (P13 and P14) coupled to a first pair of bonding pads (P23 and P24) at the first end (the end of the left-side) of the first side (the 21 side or bottom side of the chip 2) and second pair of terminals (P11 and P12) coupled to a second pair of bonding pads (P21 and P22) at the second end (the end of the right-side) of the first side (the 21 side or bottom side of the chip 2) opposite the first end (see e.g., Fig. 1).

Next, Appellant argues "Hikita fails to disclose the recited first and second terminal pairs, and thus Hikita necessarily fails to disclose that such first and second terminal pairs are separated by a plurality of intervening terminals as provided by claims 3 and 10." This argument is not persuasive. As explained in the previous paragraphs, Hikita discloses the recited first (P13 and P14) and second (P11 and P12) terminal pairs, and thus Hikita discloses that the first (P13 and P14) and second (P11 and P12) terminal pairs are separated by a plurality of intervening terminals (the pads 12 that are located between the lines of P11 – P12 and the other line of P13 – P14; see e.g., Fig. 1) as provided by claims 3 and 10.

For all of the reasons provided above, a prima facie case of claims 1, 3, 5 – 7, 21 and 23 has been established pursuant to the requirements of the 35 U. S. C. § 102(b). Therefore, the rejection of claims 1, 3, 5 – 7, 21 and 23 is proper, and the Appellant's arguments for their reversal are not persuasive.

Response to arguments concerning the 35 U. S. C. § 102(b) rejection of claims 15 – 19 over Dreifus et al.

On page 17, Appellant argues "[I]ndependent claim 15 recites the features of 'wherein said first and second terminal pairs *are separated by a first predetermined distance sufficient to maintain a first input-to-output isolation attenuation therebetween* that is not less than *a first stopband attenuation of the first external filter* ...' Dreifus fails to contemplate an operational attenuation of an external filter in any manner, much less a stopband attenuation." This argument is not persuasive. As explained in the previous paragraphs, the metes and bounds of the terms "operational attenuation," "stopband attenuation," and "external filter" in the claims are unclear. Furthermore, Dreifus discloses an SAW filter as the external filter (the 24 in the SAW filter 20; column 6, lines 20 – 34) as same as the appellant's SAW filter (112; Fig. 2, page 6, paragraph 0022, line 3) and Dreifus also discloses in e.g., Fig. 2 all of the structural limitations, i.e., first, second, third, and fourth terminals (the pads on the external integrated circuits device that are attached to the elements 26) being separated by a first predetermined distance (the distance that is formed between the elements 26; see e.g., Fig. 2) and connected to an external filter (24 of the SAW filter 20; see e.g., Fig. 2) thru the first, second, third, and fourth bonding pads (26s; see e.g., Fig. 2) as same as the appellant's SAW filter (112; Fig. 2, page 6, paragraph 0022, line 3) as recited in the rejected claim 15. Even further, Appellant clearly stated in his/her specification a practical SAW filter ... has a small attenuation in the passband, high finite attenuation in the stop band (page 5, paragraph 0018, lines 4 – 6). Thus, Dreifus discloses the stopband attenuation of an external filter and an operational attenuation.

Next, Appellant argues "fails to support an assertion that Dreifus discloses or suggests the features of 'wherein said first terminal and said second terminal are separated by a *predetermined* distance sufficient to maintain a first input-to-output isolation attenuation therebetween that is not less than a first stopband attenuation of the first external filter, and wherein said third terminal and said fourth terminal are separated by a second predetermined distance sufficient to maintain a second input-to-output isolation attenuation therebetween that is not less than a second stopband attenuation of the second external filter' as recited by claim 15." This argument is not persuasive. As explained in the previous paragraphs, the metes and bounds of the terms "first and second predetermined distances," "first and second input-to-output isolation attenuations," "first and second stopband attenuations," and "first and second external filters" in the claims are unclear. Furthermore, Dreifus discloses in e.g., Fig. 2 said first and second terminal pairs (the pads on the external integrated circuits device that are attached to the elements 26) being separated by a first predetermined distance (the distance that is formed between the elements 26; see e.g., Fig. 2) sufficient to maintain an input-to-output isolation attenuation therebetween of not less than a first stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers and positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Dreifus et al. discloses a filter, hence Dreifus et al. fully anticipates this limitation) of the first external filter (24, at the right-side), and wherein said third terminal and said fourth terminal (the

pads on the external integrated circuits device that are attached to the elements 26) are separated by a second predetermined distance (the distance that is formed between the elements 26) sufficient to maintain a second input-to-output isolation attenuation therebetween that is not less than a second stopband attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Dreifus et al. discloses a filter, hence Dreifus et al. fully anticipates this limitation) of the second external filter (24, at the left-side; see e.g., Fig. 2).

Next, Appellant argues "Dreifus fails to disclose an integrated circuit package encapsulating a semiconductor substrate and having first, second, third, and fourth terminals corresponding and coupled to first, second, third, and fourth bonding pads as recited by claim 15." This argument is not persuasive because Dreifus clearly discloses in e.g., Fig. 2 an integrated circuit package (the external integrated circuits device that has the external connections which are attached to the element 21; column 6, lines 33 and 34) encapsulating said semiconductor substrate (21) and having first, second, third, and fourth terminals (the pads on the external integrated circuits device that are attached to the elements 26) corresponding and coupled to said first, second, third, and fourth bonding pads, respectively (see e.g., Fig. 2 and column 6, lines 33 and 34). Furthermore, appellant argues "[F]acilitation of 'external

connection' does not expressly or inherently disclose an integrated circuit package that encapsulates the substrate of Dreifus, much less that any such integrated circuit package necessarily includes terminals coupled to the contact pads 26 of Dreifus. Dreifus therefore fails to disclose an 'integrated circuit package encapsulating the semiconductor substrate' as recited by claim 15." This argument is not persuasive because the term "external connection" in column 6, lines 33 – 34 of Dreifus clearly implies a connection to at least one external device. According to the disclosure of Dreifus all of the pads 26 provide external connection to at least one external device that encapsulates at least a portion of the substrate of Dreifus and the claim 15 does not specifically claim that the integrated circuit package encapsulating the every or all semiconductor substrate. Thus, Dreifus fully anticipates the following limitation "integrated circuit package encapsulating the semiconductor substrate."

For all of the reasons provided above, a prima facie case of claims 15 – 19 has been established pursuant to the requirements of the 35 U. S. C. § 102(b). Therefore, the rejection of claims 15 – 19 is proper, and the Appellant's arguments for their reversal are not persuasive.

Response to arguments concerning the 35 U. S. C. § 102(b) rejection of claims 26, 27 and 29 over Hazama et al.

On page 20, Appellant argues "Hazama fails to contemplate an operational attenuation of an external filter in any manner, much less a stopband attenuation." This argument is not persuasive. As explained in the previous paragraphs, the metes and bounds of the terms "operational attenuation," "stopband attenuation," and "external filter" in the claims are unclear.

Furthermore, Hazama discloses an SAW filter as the external filter (the VHF filter in the SAW filter; column 7, line 29 – column 8, line 1) as same as the appellant's SAW filter (112; Fig. 2, page 6, paragraph 0022, line 3) and Hazama also discloses in e.g., Fig. 9B all of the structural limitations, i.e., first (41), second (41'), third (42), and fourth (42') terminals being separated by a first predetermined distance (the distance between the elements 41, 41', 42 and 42'; see e.g., Fig. 9B) and connected to an external filter (the VHF filter of the SAW filter; see e.g., Fig. 9B) as same as the appellant's SAW filter (112; Fig. 2, page 6, paragraph 0022, line 3) as recited in the rejected claim 26. Even further, Appellant clearly stated in his/her specification a practical SAW filter … has a small attenuation in the passband, high finite attenuation in the stop band (page 5, paragraph 0018, lines 4 – 6). Thus, Hazama discloses the stopband attenuation of an external filter and an operational attenuation.

Next, Appellant argues "Hazama also fails to disclose or suggest that pairs of terminals of an integrated circuit are separated by a *predetermined* distance sufficient to maintain an input-to-output isolation attenuation therebetween that is not less than a stopband attenuation of an external filter as provided by claim 26." This argument is not persuasive. As explained in the previous paragraphs, the metes and bounds of the terms "predetermined distance," "input-to-output isolation attenuation," "stopband attenuation," and "external filters" in the claims are unclear. Furthermore, Hazama discloses in e.g., Fig. 9B said adjacent first (41) and second (41') terminals and said adjacent third (42) and fourth (42') terminals are separated by a first predetermined distance (the distance between the elements 41, 41', 42 and 42') sufficient to maintain an input-to-output isolation attenuation therebetween that not less than a first stopband

attenuation (as explained in the previous paragraph, the first stopband attenuation could be any number between negative infinity numbers to positive infinity numbers. If we measure a stopband attenuation of any filter at one point that is the lowest value of the stopband attenuation of the filter and measure the input-to-output isolation attenuation at it's highest point, then the value of the input-to-output isolation attenuation is always greater then the lowest value of the stopband attenuation of any filter. Since Hazama et al. discloses a filter, hence Hazama et al. fully anticipates this limitation) of the first external filter (the VHF filter).

For all of the reasons provided above, a prima facie case of claims 26, 27 and 29 has been established pursuant to the requirements of the 35 U. S. C. § 102(b). Therefore, the rejection of claims 26, 27 and 29 is proper, and the Appellant's arguments for their reversal are not persuasive.

Response to arguments concerning the 35 U. S. C. § 103(a) rejection.

On page 21, Appellant argues "Hikita fails to disclose or suggest each and every feature recited by claims 1 and 21, from which claims 4, 8, 10 – 14, and 25 respectively depend … Hikita therefore fails to disclose or suggest the particular combination of features recited by claims 4, 8, 10 – 14, 24 and 25 at least by virtue of their respective dependencies from one of claims 1 and 21." This argument is not persuasive. The 103 rejection of the claims 4, 8, 10 – 14, and 25 are not distinguish over the prior art references, as explained in the above paragraphs. Since the base claims are not allowable, the rejection of claims 4, 8, 10 – 14, and 25 is proper, and the Appellant's arguments for their reversal are not persuasive.

Furthermore, Appellants argues "[C]laim 5 depends from 3 and claim 12 depends from claim 10. As discussed above, Hikita fails to disclose, or even suggest, first and second terminal pairs of an integrated circuit package that are coupled to first and second bonding pads configured to be coupled to an external filter as recited by claim 1, or that the first and second terminal pairs are separated by a first plurality of intervening terminals as recited by dependent claims 3 and 10. Hikita therefore necessarily fails to disclose or suggest that the first plurality of intervening terminals 'comprises at least one power supply terminal' as recited by claims 5 and 12." This argument is not persuasive. First, claim 5 is rejected under the 35 U.S.C. 102(b) rejection over Hikita et al. Thus, the claim 5 shouldn't be argued under the 35 U.S.C. 103(a) rejection. Second, as explained in the previous paragraphs, Hikita discloses the recited first (P13 and P14) and second (P11 and P12) terminal pairs, and thus Hikita discloses that the first (P13 and P14) and second (P11 and P12) terminal pairs are separated by a plurality of intervening terminals (the pads 12 that are located between the lines of P11 – P12 and the other line of P13 – P14; see e.g., Fig. 1) as provided by claims 3 and 10. Also, the limitation "said first plurality of intervening terminals comprises at least one power supply terminal" is an intended use language that does not structurally or patentably distinguish the claimed invention from the structure as disclosed by Hikita et al. Furthermore, since any one of the first plurality of intervening terminals is capable of performing as a power supply terminal, Hikita et al. fully meets this limitation. Thus, Hikita discloses a plurality of intervening terminals including a power supply terminal as recited by claims 5 and 12. Therefore, the 102 rejection of the claim 5 and the 103 rejection of the claim 12 are not distinguish over the prior art references, as explained in the above paragraphs. Since the base claims are not allowable, the rejection of claims 5 and 12 is

proper, and the Appellant's arguments for their reversal are not persuasive.

Next, Appellant argues "[A]s discussed above, Dreifus fails to disclose a number of features recited by claim 15. Hayashi fails to compensate for the deficiencies of Dreifus with respect to claim 15, and the Office fails to provide an explicit analysis with an articulated reasoning to address how one of ordinary skill in the art might arrive at these features missing from the combination of Dreifus and Hayashi. Accordingly, the proposed combination of Dreifus and Hayashi fails to disclose or suggest each and every feature recited by claim[s] 20 at least by virtue of its dependency from claim 15. Claim 20 therefore is allowable under 35 U.S.C. § 103(a)." This argument is not persuasive. The 103 rejection of the claim 20 is not distinguish over the prior art references, as explained in the above paragraphs. Since the base claim is not allowable, the rejection of claim 20 is proper, and the Appellant's arguments for their reversal are not persuasive.

Finally, Appellant argues "Hazama fails to disclose a number of features recited by claim 26. Hazama in fact also fails to suggest these missing features, and the Office fails to provide an explicit analysis with an articulated reasoning to address how one of ordinary skill in the art might arrive at these features missing from the disclosure of Hikita. Hazama therefore fails to disclose or suggest the particular combinations of features recited by claim 26 at least by virtue of its dependency from claim 26. Claim 28 therefore is allowable under 35 U.S.C. § 103(a)." This argument is not persuasive. The 103 rejection of the claim 28 is not distinguish over the prior art references, as explained in the above paragraphs. Since the base claim is not allowable, the rejection of claim 28 is proper, and the Appellant's arguments for their reversal are not

persuasive.

For all the reasons provided above, a prima facie case of obviousness of claims 4, 8, 10 – 14, 20, 25 and 28 have been established pursuant to the requirements of the 35 U.S.C. § 103(a). Therefore, the rejection of claims 4, 8, 10 – 14, 20, 25 and 28 are proper, and the Appellant's arguments for their reversal are not persuasive.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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